

Virginia Saltwater Development Fund

Evaluation of a Proposal for the Development of a Research or Data Collection Project

Project Number: 1206-17

Date: 2/28/07

Title: Q) Laboratory Investigations of the Ability of Striped Bass to Function under Low Ambient Oxygen Conditions

“The Virginia Saltwater Recreational Fishing Development Fund is to be used solely for the purpose of conserving and enhancing finfish taken by recreational anglers, enforcing laws related to natural resource conservation, improving recreational fishing opportunities, obtaining necessary data and conducting research for fisheries management, and creating or restoring habitat for species taken by recreational fishermen.”

Code of Virginia, Section 28.2-302.3

NOTE: Please read the entire scoresheet before beginning, then provide comments, and circle () the appropriate score for each item. Thank You.

A. Problem Description and Resolution (20 points)

1. Comment on the adequacy of the problem description, background information, knowledge of available literature/data sources, and anticipated benefits.

The potential problem is well described. This is an exploratory proposal, aimed at establishing the link between responses of striped bass to variable levels of oxygen saturation, so it is somewhat novel, as there is not much background specific to the striped bass: hypoxia relationship. However, the methodologies involved in assessing this relationship (levels of oxygen saturation vs. response of striped bass) is well documented (for other species⁰, as several studies are cited, concerning measurements of *In Vivo* response of striped bass to stressors.

The anticipated benefits cannot be well catalogued because this is the first stage of exploring this potential problem, and the investigators tell us, up front, that field studies will be needed to corroborate laboratory findings. The expected benefits are not ones that will immediately or directly befall the resource or fishers; rather, it is an investigative beginning.

2. Describe your views on the conceptual approach to solve the problem.

The experimental design is straight forward, in that responses of striped bass to various levels of oxygen can be monitored and results can be tested statistically

via ANOVA. Treatments to be analyzed include “Normal” vs. “Diseased” striped bass and 4 levels of oxygen saturation.

SCORE (Circle one)	Poor				Excellent
	0	5	10	(15)	20

B. Soundness of Project Design/Technical Approach (25 points)

1. Is there sufficient information to technically evaluate the proposal?

Yes. The approach section supplies the methods to be used, in what seems to be an exploratory step towards assessing striped bass response to variable oxygen levels.

2. What are the strengths/weaknesses of the project design (thoroughness, practicality, methods, integration with other work, etc.)?

The complication of the study is the incorporation of perhaps too many variables for testing. It is one thing to assess healthy striped bass response to different levels of oxygen saturation, but including a diseased vs. healthy treatment in the experiment may confound the results. For example, at what stage of the disease do striped bass function differently to different levels of oxygen, and will there be adequate samples to ascertain this, assuming there is some gradient of intensity of the disease? Is a separate experiment needed to test striped bass in various types of mycobacteriosis?

SCORE (Circle One)	Poor					Excellent
	0	5	(10)	15	20	25

C. Project Management and Experience/Qualifications of Personnel (15 points)

What is your opinion of the experience and capabilities of the Principal Investigator(s) to manage and conduct the work, the availability of facilities, and education and experience of assisting personnel.

Both listed investigator have peer-reviewed publications in the literature cited section, and the principal investigator cites studies related directly to this proposal. All other aspects of the experience and qualifications seem exemplary.

SCORE (Circle one)	Poor			Excellent
	0	5	10	(15)

D. Project costs (15 points)

Is the budget realistic and reasonable? Indicate any unreasonable costs.

I'm not sure whether there is a preferred budget allocation scheme, for these proposals (i.e. set percentages of total for salaries, equipment other). However, VIMS is providing the equipment and instruments for the study, rather than requesting assistance, and that should be considered favorable.

SCORE (circle One)	Poor			Excellent
	0	5	10	(15)

E. Value of the Project to Fisheries Managers (25 points)

Do you believe the results of this project will further management of the species described? Will the results be useful to managers?

As proposed, there would be need of field studies to understand the negative effects from hypoxia on striped bass. Managers would also need that field corroboration of any laboratory results. If the investigators can incorporate the disease treatments into the experiment, there should be results that illustrate the effects of oxygen saturation levels on responses of striped bass. Perhaps, a more important, immediate benefit of such a study would be some understanding a critical factor (oxygen level) that promotes the intensity of mycobacterium spp. infection.

Managers seem more concerned with maintaining a bay-wide striped harvest of 9 million pounds, through effort controls and other measures. However, there were many investigations into the crash of striped bass, in the near past, that were based on more than over-exploitation scenarios (i.e. causes of increased natural mortality), and it is important to understand the other part of mortality, to avoid a similar recurrence of stock depletion.

SCORE (circle one)	Poor				Excellent
	0	5	10	(15)	20 25

Note: This score is based only on the current laboratory proposal, not on the potential of a companion field study.

PLEASE ADD ANY FURTHER COMMENTS ON THE PROPOSALS BELOW: